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## Patent Abstracts of Japan

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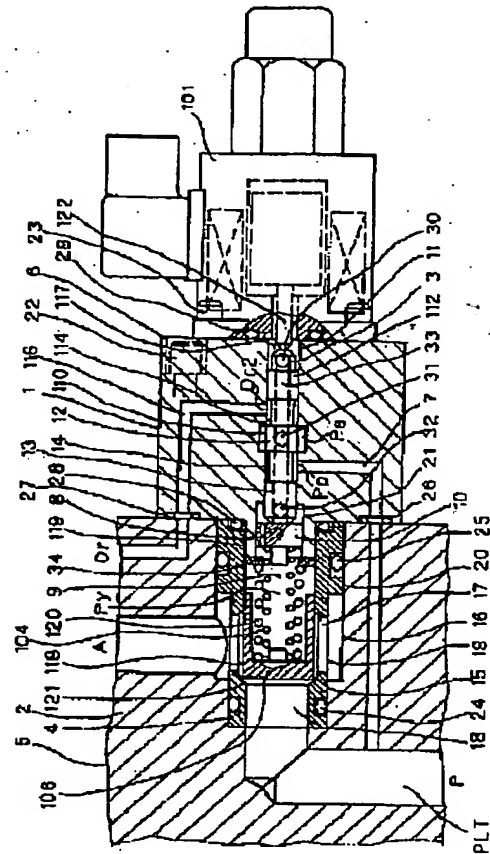
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TITLE : PROPORTIONAL THROTTLE VALVE



**ABSTRACT :** **PROBLEM TO BE SOLVED:** To provide a proportional throttle valve that stabilizes an associated system, keeps its own responsiveness intact, has a strong resistance to disturbances all for high precision and high efficiency, through positive utilization of its operating chamber, which includes a feedback spring and lies between the pilot spool of a three-way pilot valve and the main spool of a pilot-operated main valve, as a cooperative damping chamber via a resistance element.

**SOLUTION:** The proportional throttle valve comprises an electromagnetic actuator, a three-way pilot valve having a pilot line Pp a control line Pa and a return line Dr2, a pilot-operated main valve in which at least pressures in a pressure line PLT and an operating chamber Py are opposite to each other, and a feedback spring 104 disposed in the operating chamber Py. Another pilot line 7 is laid from the pressure line PLT to the pilot line Pp, and the operating chamber Py and control line Pa are connected via a resistance element 8, so that the operating chamber Py serves as a cooperative damping chamber 9.

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